

WHAT IS CLAIMED IS:

1. A display comprising:

a light source; and

5 an applied voltage control part controlling a voltage applied to a display pixel in response to an ON- or OFF-state of said light source, wherein

said applied voltage control part includes a control circuit detecting said ON- or OFF-state of said light source and outputting either at least either white reference voltage data or black reference voltage data corresponding to said ON-state of said light source or at least either white reference voltage data or black reference voltage data corresponding to said OFF-state of 15 said light source on the basis of said ON- or OFF-state of said light source.

2. The display according to claim 1, wherein

said control circuit includes:

20 a memory storing at least either said white reference voltage data or said black reference voltage corresponding to said ON-state of said light source and at least either said white reference voltage data or said black reference voltage data corresponding to said OFF-state of said light source, and

a selection circuit detecting said ON- or OFF-state  
of said light source and selecting either at least either  
said white reference voltage data or said black reference  
voltage corresponding to said ON-state of said light  
5 source or at least either said white reference voltage  
data or said black reference voltage data corresponding to  
said OFF-state of said light source on the basis of said  
ON- or OFF-state of said light source.

10 3. The display according to claim 1, wherein  
said white reference voltage data and said black  
reference voltage data are digital data,

said display further comprising a reference voltage  
digital-to-analog conversion circuit converting at least  
15 either said white reference voltage data or said black  
reference voltage corresponding to said ON-state of said  
light source and at least either said white reference  
voltage data or said black reference voltage data  
corresponding to said OFF-state of said light source from  
20 digital signals to analog signals.

4. The display according to claim 1, wherein  
video data supplied to said display is digital data,  
said display further comprising a video data digital-  
25 to-analog conversion circuit converting said video data

from a digital signal to an analog signal on the basis of either at least either said white reference voltage data or said black reference voltage data corresponding to said ON-state of said light source or at least either said  
5 white reference voltage data or said black reference voltage data corresponding to said OFF-state of said light source.

5. The display according to claim 4, wherein  
10 said video data digital-to-analog conversion circuit converts said video data from said digital signal to said analog signal on the basis of both of said white reference voltage data and said black reference voltage data.

15 6. The display according to claim 1, wherein  
video data supplied to said display is digital data,  
said display further comprising a video data digital-  
to-analog conversion circuit converting said video data  
from a digital signal to an analog signal before  
20 correcting said video data on the basis of either at least  
either said white reference voltage data or said black  
reference voltage corresponding to said ON-state of said  
light source or at least either said white reference  
voltage data or said black reference voltage data  
25 corresponding to said OFF-state of said light source.

7. The display according to claim 6, wherein  
said video data digital-to-analog conversion circuit  
converts said video data from said digital signal to said  
5 analog signal on the basis of both of said white reference  
voltage data and said black reference voltage data.

8. The display according to claim 1, further  
comprising a transmission region and a reflection region,  
10 for displaying with at least said transmission region  
when said light source is in said ON-state while  
displaying with said reflection region when said light  
source is in said OFF-state, and  
applying a transmission voltage to said display pixel  
15 with said applied voltage control part when said light  
source is in said ON-state while applying a reflection  
voltage to said display pixel with said applied voltage  
control part when said light source is in said OFF-state.

20 9. The display according to claim 1, wherein  
said applied voltage control part controls said  
voltage applied to said display pixel in response to said  
ON- or OFF-state of said light source so that brightness-  
gradation characteristics in said ON-state of said light  
25 source and brightness-gradation characteristics in said

OFF-state of said light source are substantially identical to each other.

10. A display comprising:

5        a light source; and

an applied voltage control part controlling a voltage applied to a display pixel in response to an ON- or OFF-state of said light source, wherein

      said applied voltage control part includes:

10        a memory storing at least either white reference voltage data or black reference voltage data corresponding to said ON-state of said light source and at least either white reference voltage data or black reference voltage data corresponding to said OFF-state of said light source,

15        and

      a selection circuit detecting said ON- or OFF-state of said light source and selecting at least either at least either said white reference voltage data or said black reference voltage data corresponding to said ON-state of said light source or at least either said white reference voltage data or said black reference voltage data corresponding to said OFF-state of said light source on the basis of said ON- or OFF-state of said light source.

25        11. The display according to claim 10, wherein

said white reference voltage data and said black  
reference voltage data are digital data,

    said display further comprising a reference voltage  
digital-to-analog conversion circuit converting at least  
5     either said white reference voltage digital data or said  
black reference voltage digital data corresponding to said  
ON-state of said light source and at least either said  
white reference voltage digital data or said black  
reference voltage digital data corresponding to said OFF-  
10    state of said light source from digital signals to analog  
signals.

12. The display according to claim 10, wherein  
video data supplied to said display is digital data,  
15     said display further comprising a video data digital-  
to-analog conversion circuit converting said video data  
from a digital signal to an analog signal on the basis of  
either at least either said white reference voltage data  
or said black reference voltage corresponding to said ON-  
20    state of said light source or at least either said white  
reference voltage data or said black reference voltage  
data corresponding to said OFF-state of said light source.

13. The display according to claim 12, wherein  
25     said video data digital-to-analog conversion circuit

converts said video data from said digital signal to said analog signal on the basis of both of said white reference voltage data and said black reference voltage data.

5        14. The display according to claim 10, wherein  
          video data supplied to said display is digital data,  
          said display further comprising a video data digital-  
to-analog conversion circuit converting said video data  
from a digital signal to an analog signal before  
10      correcting said video data on the basis of either at least  
either said white reference voltage data or said black  
reference voltage corresponding to said ON-state of said  
light source or at least either said white reference  
voltage data or said black reference voltage data  
15      corresponding to said OFF-state of said light source.

15      15. The display according to claim 14, wherein  
          said video data digital-to-analog conversion circuit  
converts said video data from said digital signal to said  
20      analog signal on the basis of both of said white reference  
voltage data and said black reference voltage data.

25      16. The display according to claim 10, further  
comprising a transmission region and a reflection region,  
for displaying with at least said transmission region

when said light source is in said ON-state while displaying with said reflection region when said light source is in said OFF-state, and

5 applying a transmission voltage to said display pixel with said applied voltage control part when said light source is in said ON-state while applying a reflection voltage to said display pixel with said applied voltage control part when said light source is in said OFF-state.

10 17. The display according to claim 10, wherein  
said applied voltage control part controls said  
voltage applied to said display pixel in response to said  
ON- or OFF-state of said light source so that brightness-  
gradation characteristics in said ON-state of said light  
15 source and brightness-gradation characteristics in said  
OFF-state of said light source are substantially identical  
to each other.

18. A display comprising:

20 a light source; and  
an applied voltage control part controlling a voltage  
applied to a display pixel in response to an ON- or OFF-  
state of said light source, wherein  
said applied voltage control circuit includes a gamma  
25 correction circuit detecting said ON- or OFF-state of said

light source and gamma-correcting video data on the basis of either gamma correction data corresponding to said ON-state of said light source or gamma correction data corresponding to said OFF-state of said light source.

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19. The display according to claim 18, wherein  
said gamma correction circuit includes:

a storage part storing said gamma correction data corresponding to said ON-state of said light source and  
10 said gamma correction data corresponding to said OFF-state of said light source,

a selection circuit detecting said ON- or OFF-state of said light source and selecting either said gamma correction data corresponding to said ON-state of said light source or said gamma correction data corresponding to said OFF-state of said light source on the basis of  
15 said ON- or OFF-state of said light source, and

a data processing circuit gamma-correcting said video data on the basis of either said gamma correction data corresponding to said ON-state of said light source or  
20 said gamma correction data corresponding to said OFF-state of said light source.

20. The display according to claim 18, wherein  
25 said gamma correction data are digital data,

said display further comprising a digital-to-analog conversion circuit converting said video data gamma-corrected with said gamma correction digital data from a digital signal to an analog signal.

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    21. The display according to claim 18, further comprising a transmission region and a reflection region, for displaying with at least said transmission region when said light source is in said ON-state while displaying with said reflection region when said light source is in said OFF-state, and

    applying a transmission voltage to said display pixel with said applied voltage control part when said light source is in said ON-state while applying a reflection voltage to said display pixel with said applied voltage control part when said light source is in said OFF-state.

    22. The display according to claim 18, wherein said applied voltage control part controls said voltage applied to said display pixel in response to said ON- or OFF-state of said light source so that brightness-gradation characteristics in said ON-state of said light source and brightness-gradation characteristics in said OFF-state of said light source are substantially identical to each other.

23. A method of controlling a display, comprising  
steps of:

detecting an ON- or OFF-state of a light source  
5 having different bright-gradation characteristics; and  
controlling a voltage applied to a display pixel in  
response to said ON- or OFF-state of said light source.

24. The method of controlling a display according to  
10 claim 23, wherein

said step of controlling said voltage applied to said  
display pixel includes a step of controlling said voltage  
applied to said display pixel in response to said ON- or  
OFF-state of said light source so that brightness-  
15 gradation characteristics in said ON-state of said light  
source and brightness-gradation characteristics in said  
OFF-state of said light source are substantially identical  
to each other.